



Service Manual

Washing machine Frontloader AWO 1200 EX

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	Family	SC1



Technical data

Dimensions

Height	85	cm
Width	59.5	cm
Depth	60	cm

Weight

Without packing	73	kg
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Main Connection

Voltage	230	V
Frequency	50	Hz
Power consumption	2.3	kW
Fuse rating	10	A

Drum

Volume	48	l
Wash spin	54	rpm
Ramp spin	95	rpm
Speed spinning max.	1200	rpm

Capacity of dry laundry

Cotton/coloured	5	kg
Cotton rapid	3	kg
Cotton short	5	kg
Easy care	2.5	kg
Easy care rapid	1.5	kg
Easy care short	2.5	kg
Delicate	1.5	kg
Wool	1	kg

Water Level

Level 1		
Switching point	55 ± 5	mmWc
Switching back point	35 ± 5	mmWc
Overflow	280 ± 20	mmWc

Water level inside the drum

(only switching level inside the drum)

Level 1	25 - 39	mm
Overflow	267 - 306	mm

Nominal currents

Contacts		
11 - 12	4 (4)	A
11 - 14	16 (4)	A
11 - 16	1 (1)	A
Contact system		
11 - 12 - 14	spring contact	
11 - 16	sliding contact	
Damping system	no	

Door lock

Lock time (20 °C)	3" - 6"	
Unlock time	60" - 90"	
Nominal voltage	230	V
Nominal current:		
Contact 4 - 5	16 (4)	A

Heating element

Kind of heating	Tubular heating element with NTC - sensor	
Nominal Voltage	230	V
Nominal power	2050	W
resistance R25	22 - 28	Ω
Resistance NTC:		
0 °C	35.9	kΩ
30 °C	9.8	kΩ
40 °C	6.6	kΩ
50 °C	4.6	kΩ
60 °C	3.2	kΩ
70 °C	2.3	kΩ
95 °C	1.1	kΩ

Inlet valve

Water temperature max.	60	°C
Rated flow <1 bar	8	l/min
Pressure range	0.5 - 10	bar
Nominal voltage	220 - 240	V
Frequency	50	Hz
Starting voltage:		
<6 bar	160	V
6 - 10 bar	170	V
Nominal current	35	mA
Nominal power	6	VA
Nominal (20 °C)	3.4 - 4.5	kΩ

Switch aquastop

Nominal voltage	230	V
Nominal current	3 (1)	mA
Switch energy	<15	cN

Technical data

Drain pump (synchronous)

Nominal Voltage	230	V
Nominal current	0.3	A
Nominal power	34	W
Frequency	50	Hz
Resistor (coil)	155	$\Omega \pm 7\%$
Motor protection	170	$^{\circ}\text{C}$
Capacity (1.25m height)	14 \pm 2	l/min

Program timer

Type	SC1
Timer basic	4619 710 67646
Timer programmed	4619 744 80431
Nominal voltage	230 V
Frequency	50 Hz
Positions	32

Connector

OA4.1 - OA4.2	5. Option
OA4.3 - OA4.4	6. Option
OB4.1 - OB4.2	3. Option
OB4.3 - OB4.4	4. Option
OC4.1 - OC4.2	1. Option
OC4.3 - OC4.4	2. Option
SLT3.1 - SLT3.3	Temp.selector
SLS4.1 - SLS4.4	Spin speed selector
VCF3.1 - VCF3.3	Valve (cold water)
VHF3.1 - VHF3.3	Valve (hot water)
Pi5.1 =	negative supply
Pj5.2 =	data
Pi5.3 =	clock
Pj5.4 =	positive supply
Pi 5.5 =	negative supply
PL3.1 - PL3.3	Pilot lamp

Connector

M7.1 - M7.7	Motor
DP2.1 - DP2.2	Pump
AQS2.1 - AQS2.2	Aquastopswitch
SET2.1 - SET2.2	NTC
DSS3.1 - DSS3.3	Door switch
PR2.1 - PR2.2	Pressostat

Single connector

HE2.1 - HE2.2	Heating element
PS2.1 - PS2.2	Pressostat
SM3.2 - SM3.3	mains switch (3 fold connector)

Ambient temperature	up to 70 $^{\circ}\text{C}$
Storage temperature	up to 85 $^{\circ}\text{C}$

Spin speed

Wash speed	54 rpm
Ramp speed	95 rpm
Spin speed	1200 rpm

Resistance (at the selector)

1160 rpm	4.7 k Ω
960 rpm	3.6 k Ω
780 rpm	2.7 k Ω
580 rpm	1.8 k Ω
440 rpm	1.1 k Ω
95 rpm	0.68 k Ω
0	0

Without resistor on push button switch

released	1160 rpm
pushed	580 rpm

Output

Motor	M7.6 - DSS3.2	>40 V
Aquastop	AQ2.2 - DSS3.2	230 V
in pump step	AQ2.1 - DSS3.2	230 V
NTC	not measurable	
Pump	DP2.1 - DP2.2	230 V
Doorlock	DSS3.1 - DSS3.3	230 V
Pressostat	E4 - E2	230 V
- empty	PR2.1 - E2	230 V
- full	PR2.2 - E2	230 V
Valve (Rast 2.5)	V2.1 - V2.2	>170 V
Options	not measurable	
Display module	Pi5.1 - Pi5.4	5 V
	Pi5.4 - Pi5.5	12 V

Motor

Type	MCA 52/64 - 148 t.f./ WHE 0
Belt ratio	i = 1:13.3

Resistance contacts	
6 - 7	68.7 $\Omega \pm 7\%$
4 - 5	2.15 $\Omega \pm 7\%$
5 - 6	1.46 $\Omega \pm 7\%$
5 - 7	0.65 $\Omega \pm 7\%$

Radio interference supression

Type	ISKRA - KPB 7325
Nominal voltage	230 V
Nominal capacity	250 nFX1 + 2x22 nFY2 $\pm 20\%$
Derivation current	≥ 4.15 mA (2x2.075 mA) at 250V 50Hz
Nominal resistance	1 M $\Omega \pm 5\%$

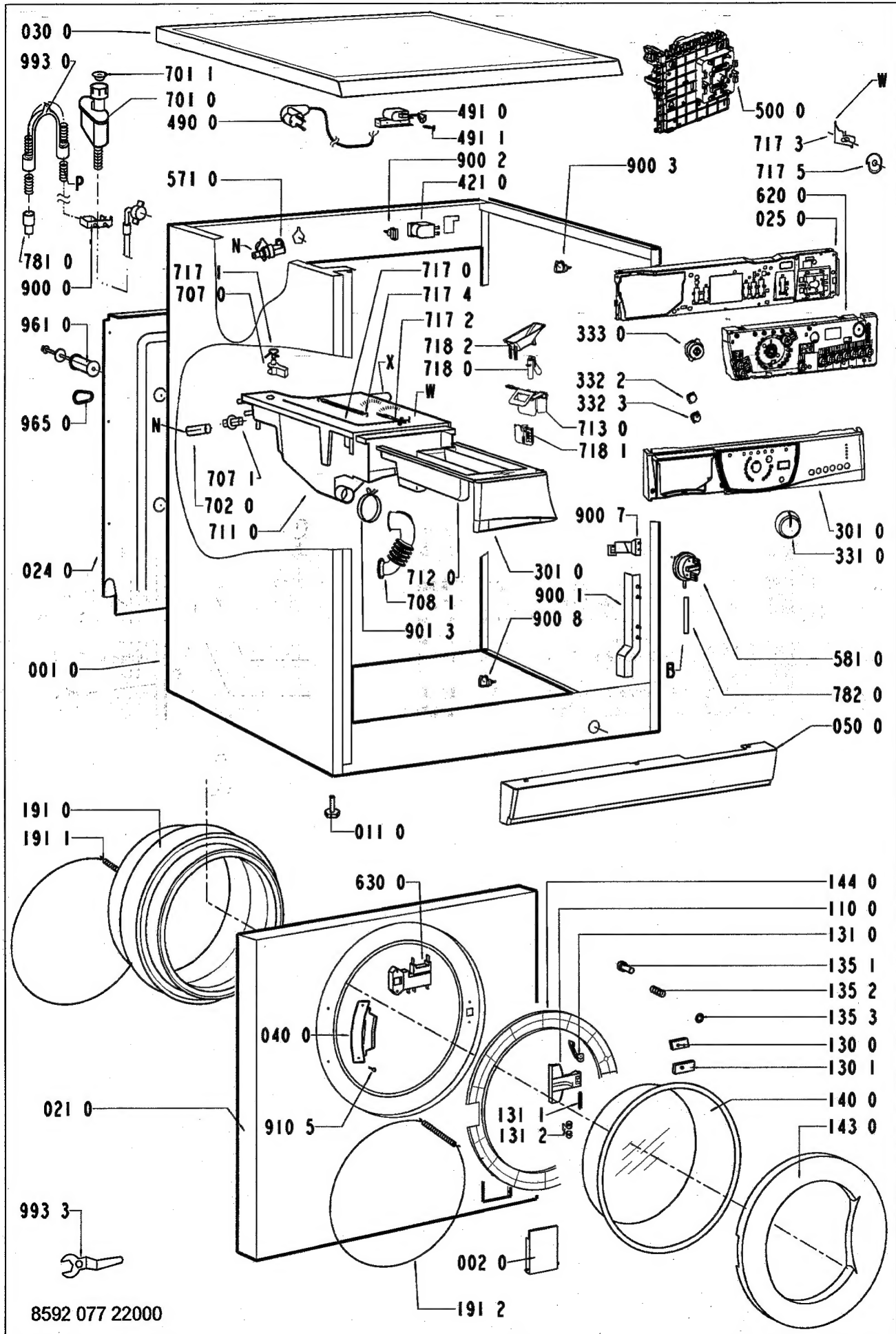
Spare part list

Model **AWO 1200 EX**
Service No. **859207722000**
Version **859207722000**

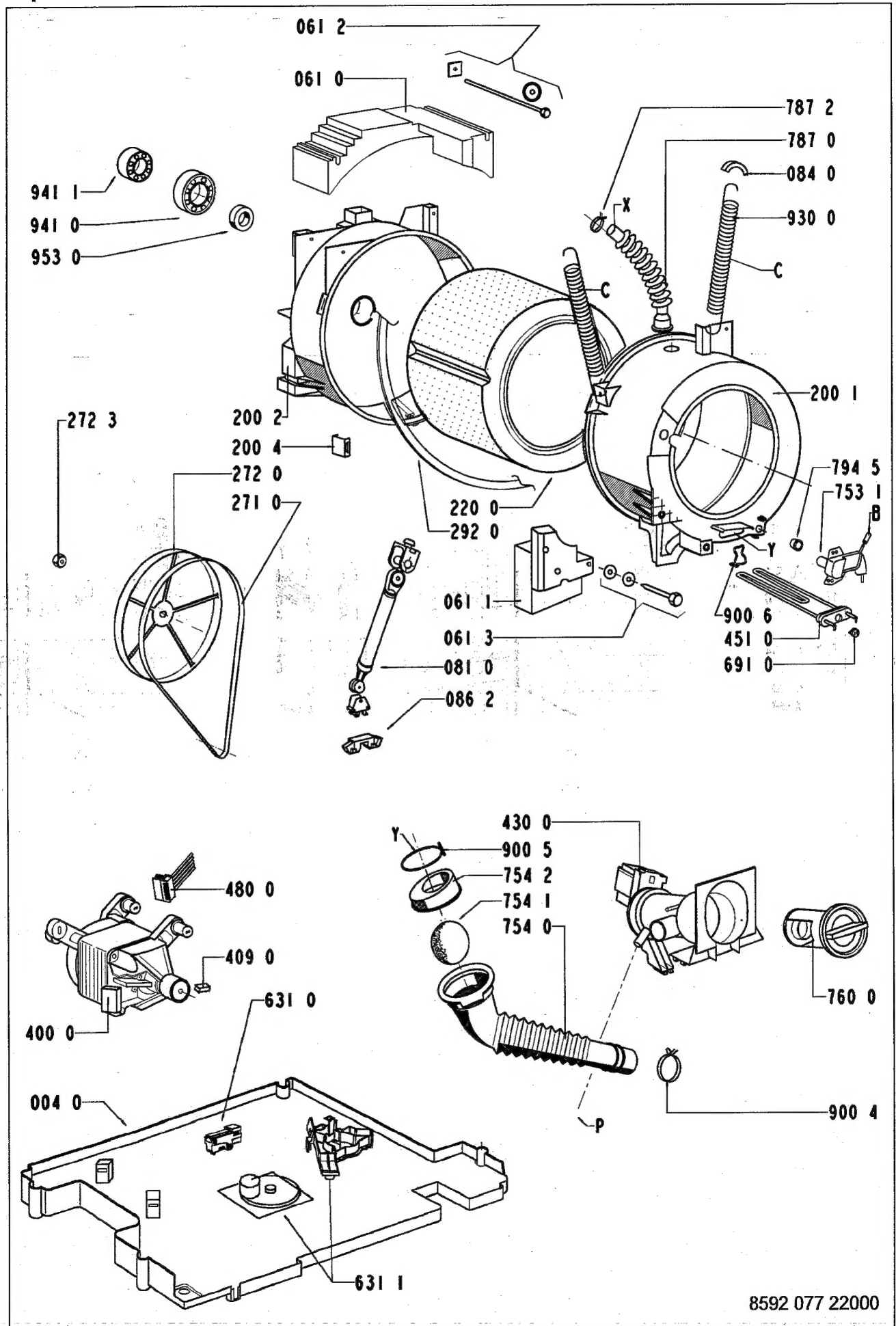
Pos. No.	12NC Code	Description
001 0	4812 440 10784	Cabinet GW
002 0	4812 440 11131	Flap square EBL
004 0	4812 440 18993	Drip tray assy
011 0	4812 462 48421	Adjust. foot
021 0	4812 440 11132	Front square Flap EBL
024 0	4812 440 18998	Panel, rear
025 0	4812 404 38737	Support EBL
030 0	4812 440 11129	Table top EBL
040 0	4812 417 18787	Hinge
050 0	4812 440 89097	Plinth EBL
061 0	4812 466 88458	Counter weight upper
061 1	4812 466 88607	Counter weight front
061 2	4819 310 39227	Mounting kit Weight top
061 3	4819 310 39228	Mounting kit Weight bottom
081 0	4812 529 18038	Shock absorber until 1200
084 0	4812 466 58001	Silent block
086 2	4812 401 18412	Stopper
110 0	4812 498 18361	Handle, door
130 0	4812 417 28047	Plate Door lock
130 1	4812 417 28048	Plate Door lock Lower
131 0	4812 417 28046	Lock Door
131 1	4812 417 28045	Pin Door Lock
131 2	4812 492 58022	Spring Door Lock
135 1	4812 498 18262	Knob Door safety GW
135 2	4812 492 58023	Spring Door Safety
135 3	4812 290 68153	Holder, adjust. Door Safety
140 0	4812 450 58981	Door glass
143 0	4812 440 11141	Glass door frame
144 0	4812 440 11139	Frame, door glas
191 0	4812 466 68729	Door bellow BK 48 l
191 1	4812 492 18017	Strap
191 2	4819 530 58059	Ring
200 1	4812 418 18369	Tub, half front 48l
200 2	4812 418 18318	Tub 48l rear
200 4	4812 290 88054	Clamp for tub
220 0	4812 418 18191	Drum 1200 0,5MM PP 48L
271 0	4812 358 18056	V-ribbed belt WH 1250 J5
272 0	4812 528 58027	Pulley DIAM. 298
272 3	4812 505 18371	Nut M 12
292 0	4812 530 58101	Gasket Tub
301 0	4812 452 14857	Control panel + handle drawer
331 0	4812 414 58263	Knob, timer EBL
332 2	4812 513 18146	Push button without LED EBL
332 3	4812 513 18145	Push button with LED EBL
333 0	4812 513 18143	Push button Start EBL
400 0	4812 361 58376	Motor MCA52WHE0
409 0	4812 362 48004	Brush, carbon motor CESET
421 0	4812 121 18142	Interf. filter 1,00 µ F
430 0	4812 310 28144	Pump, draining KIT
451 0	4812 259 28835	Heating element 2050W,230V + NTC
480 0	4812 321 78109	Cable Motor SC1/OM PP/ALPHA/GA
490 0	4819 321 18136	Cable, mains 2m SA
491 0	4812 321 28367	Strain relief
491 1	4812 502 38152	Screw 4.8x19
500 0	4812 282 18827	Timer SC1 (EI,PW,IR,RH)

Pos. No.	12NC Code	Description
571 0	4812 271 28375	Valve, magnet Single
581 0	4812 271 28441	Pressostat
620 0	4812 239 58024	Module Timer "B" C/DS
630 0	4812 280 58044	Door lock
631 0	4812 271 38358	Switch MICRO
631 1	4812 360 58112	Floater Kit BK,WH
691 0	4812 282 18702	Sensor NTC (SC1,OMEGA,ACCESS)
701 0	4812 530 28781	Hose, inlet 3.8 m (Eltek)
701 0	4819 530 28926	Hose, inlet 2.5 m (Eltek)
701 1	4819 466 69704	Gasket and filter
702 0	4819 530 29019	Hose intern
707 0	4812 526 48031	Nozzle Distribution
707 1	4812 526 48028	Nozzle
708 1	4812 530 48143	Bend
711 0	4812 418 68321	Dispenser 3 C. EBL
712 0	4812 418 68319	Drawer 3 C. cpl. EBL
713 0	4812 418 89042	Flap drawer 3 C. EBL
717 0	4819 321 28092	Bowden cable
717 1	4812 321 38013	Lever, Nozzle
717 2	4812 321 38012	Holder, adjust.
717 3	4812 278 88018	Slide
717 4	4812 492 38359	Spring, Nozzle
717 5	4812 282 18807	Cam 3 C. SC1/VBL/WH
718 0	4812 526 48051	Siphon
718 1	4812 418 89041	Separator 3 C. EBL
718 2	4812 418 89043	Grille drawer 3 C. EBL
753 1	4819 418 68234	Chamber, air
754 0	4812 530 28826	Drain hose
754 1	4812 530 28832	Lock eco
754 2	4812 530 28829	Flange eco
760 0	4812 480 58105	Filter set pump
781 0	4812 530 29342	Hose, draining
782 0	4812 530 28827	Hose Pressostat
787 0	4812 530 28813	Steam hose
787 2	4819 401 18868	Clamp, hose 26.8 mm
794 5	4812 530 58098	Gasket Airtrap
900 0	4812 255 18204	Holder Hose outlet
900 1	4812 290 88086	Bracket
900 2	4812 290 88077	Cable clamp
900 3	4812 401 18446	Cable clamp
900 4	4812 401 18549	Clamp, hose
900 5	4819 401 18529	Clamp, hose
900 6	4812 401 18444	Support Heating element
900 7	4812 256 98031	Holder pressostat
900 8	4819 401 18823	Clamp
901 3	4812 401 18414	Clamp, hose
910 5	4812 502 18516	Screw 4,2 x 13
930 0	4819 492 38139	Spring Suspension
941 0	4812 520 28004	Bearing, ball 6206
941 1	4812 520 28066	Bearing, ball 6204
953 0	4812 530 58099	Shaft seal 1200
961 0	4819 532 68829	Spacer
965 0	4812 466 68545	Cover BK/WH
993 0	4812 530 29341	Bow
993 3	4812 395 58004	Tool

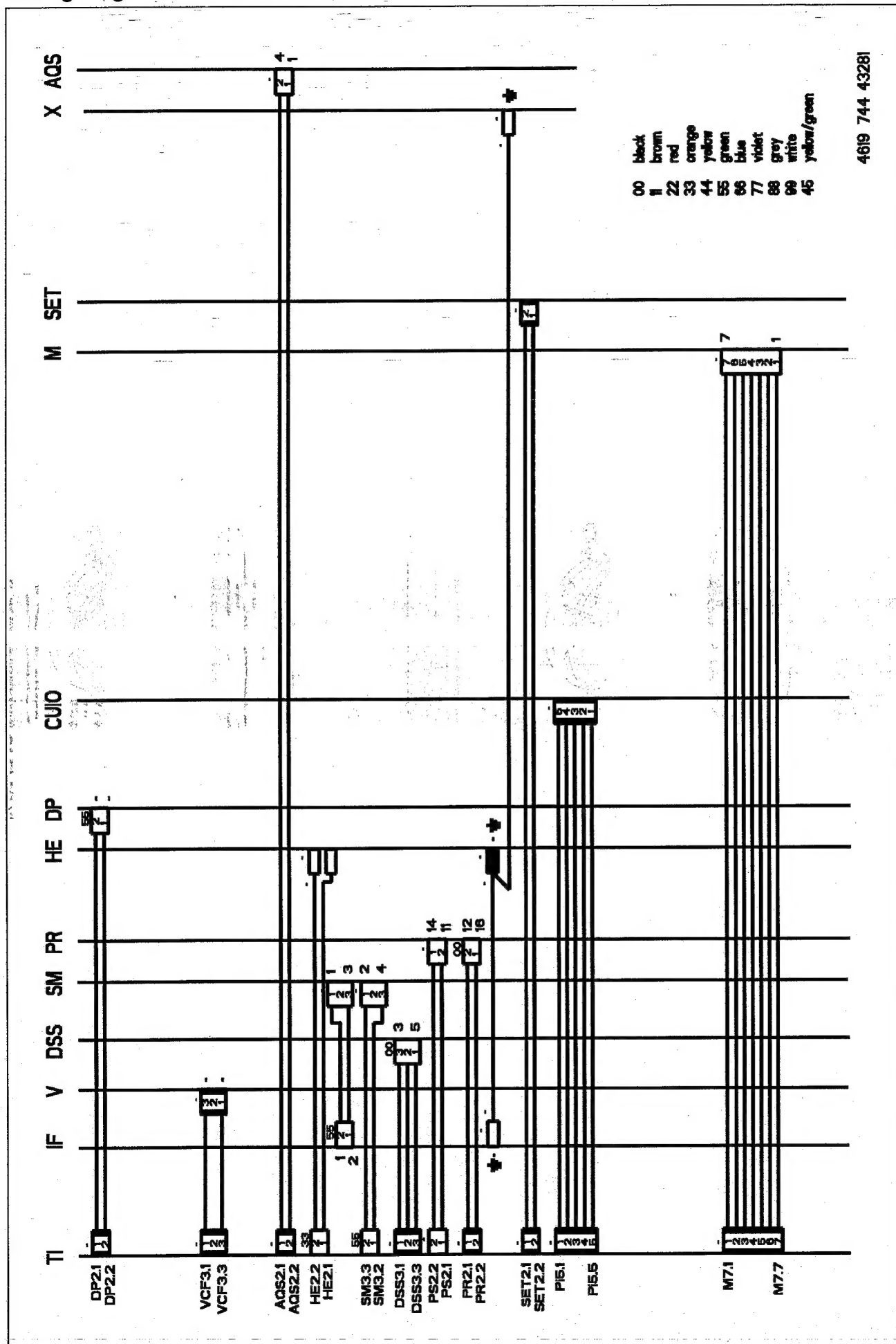
Exploded view



Exploded view



Wiring diagram



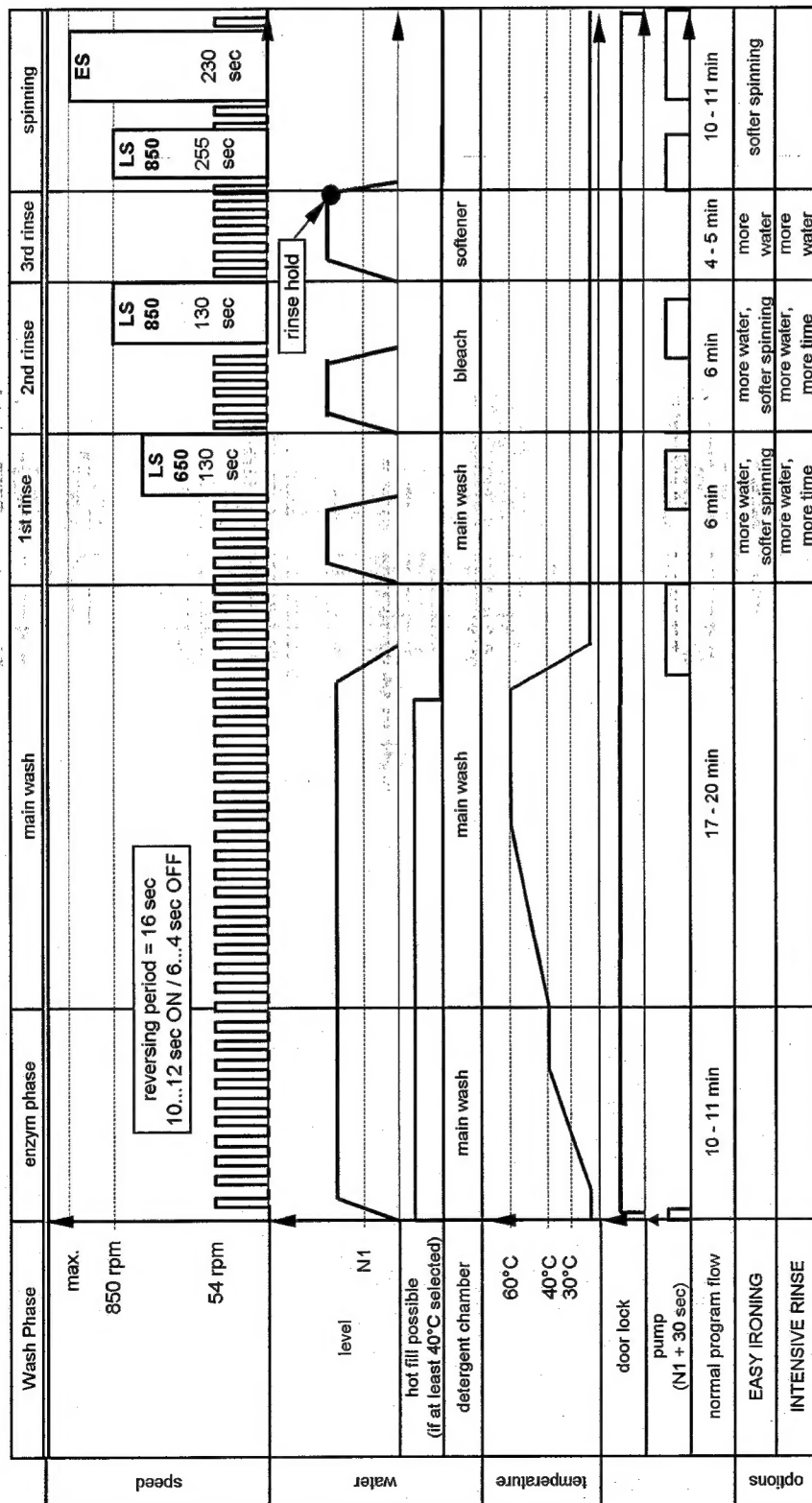
Program chart

Delta SC1/ALPHA			Wash Cycle of COTTON					4619 744 62701		
Wash Phase	prewash	enzym phase	main wash	1st rinse (not for small and medium load of Load Detection)	2nd rinse (twice, if Intensive Rinse selected + Load Detection used)	3rd rinse	spinning			
max. 850 rpm			<div>reversing period = 16 sec 10...12 sec ON / 6...4 sec OFF</div>	<div>LS 440 285 sec</div>	<div>LS 850 285 sec</div>	<div>LS 850 255 sec</div>	<div>ES 369 sec</div>			
54 rpm			<div>cool down (till 60°C, max. 45 sec)</div>	<div>LS 650 285 sec</div>	<div>LS 850 285 sec</div>	<div>LS 850 255 sec</div>	<div>ES 369 sec</div>			
level N1						<div>rinse hold</div>				
hot fill possible (if at least 40°C selected)										
detergent chamber	prewash	main wash	main wash	main wash	bleach	softener				
Tsel 40°C 30°C										
door lock										
pump (N1 + 30 sec)										
normal program flow + large load of Load Detect. only for medium load of Load Detection		15 min	50-70 min (53l Version Cotton 60°C + 20 min without options)	11 min	13 min	7 min	15 min			
only for small load of Load Detection		15 min	43-63 min		13 min	7 min	15 min			
ECO		15 min	26-46 min		13 min	7 min	15 min			
HALF LOAD			90°C, 70°C -> 60°C and 60°C, 50°C -> 40°C / + 15 min	less water	less water	less water				
QUICK / RAPID			<= 60°C / 20-30 min	less time	less time	less time				
EASY IRONING				more water, softer spinning	more water, softer spinning	more water	softer spinning			
PREWASH	16-17 min	13-14 min	35-55 min	more water, more time	more water, more time	more water				
INTENSIVE RINSE				more water, more time	more water, more time	more water				

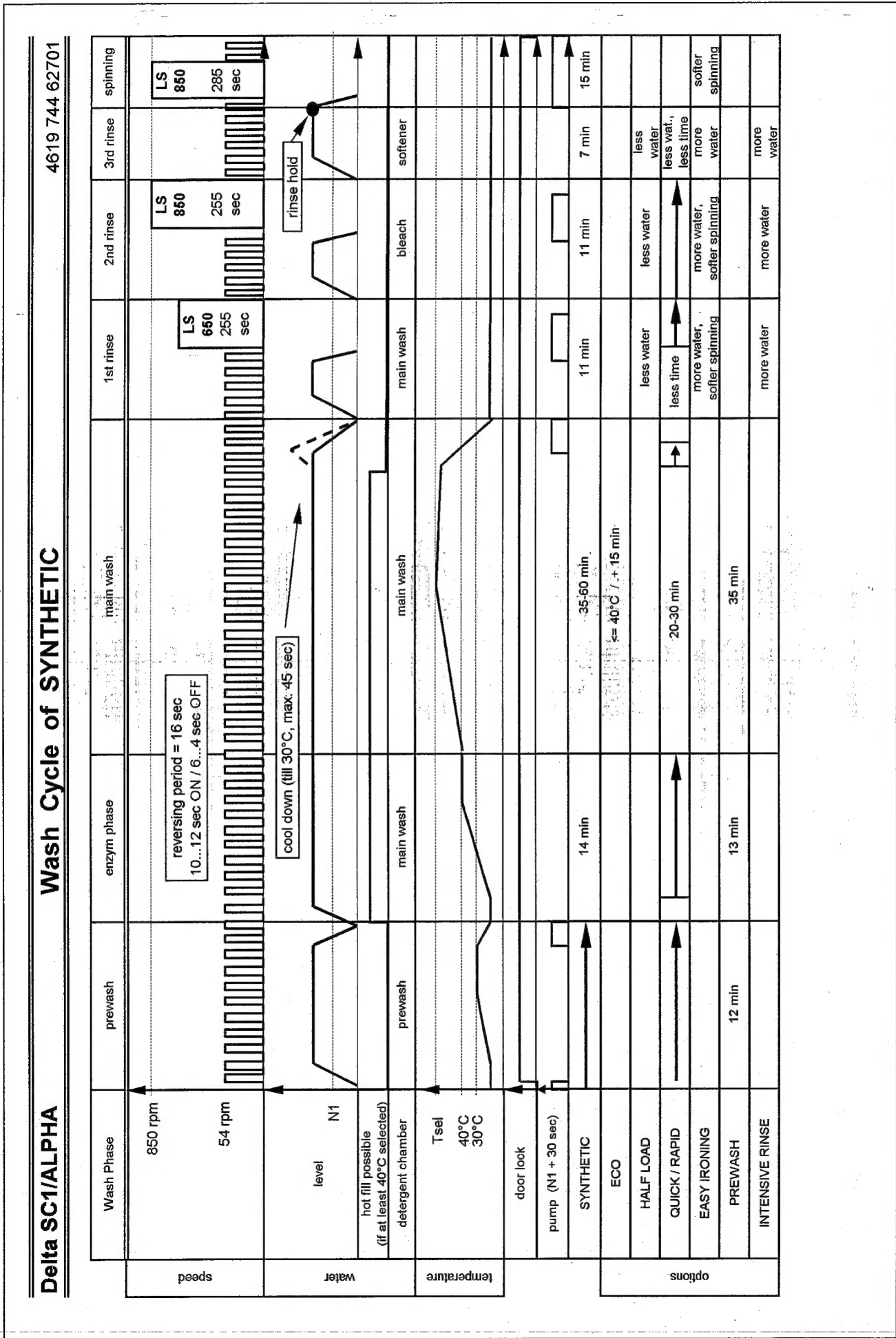
Program chart

4619 744 62701

Delta SC1/ALPHA Wash Cycle of CHRONO/DAILY



Program chart

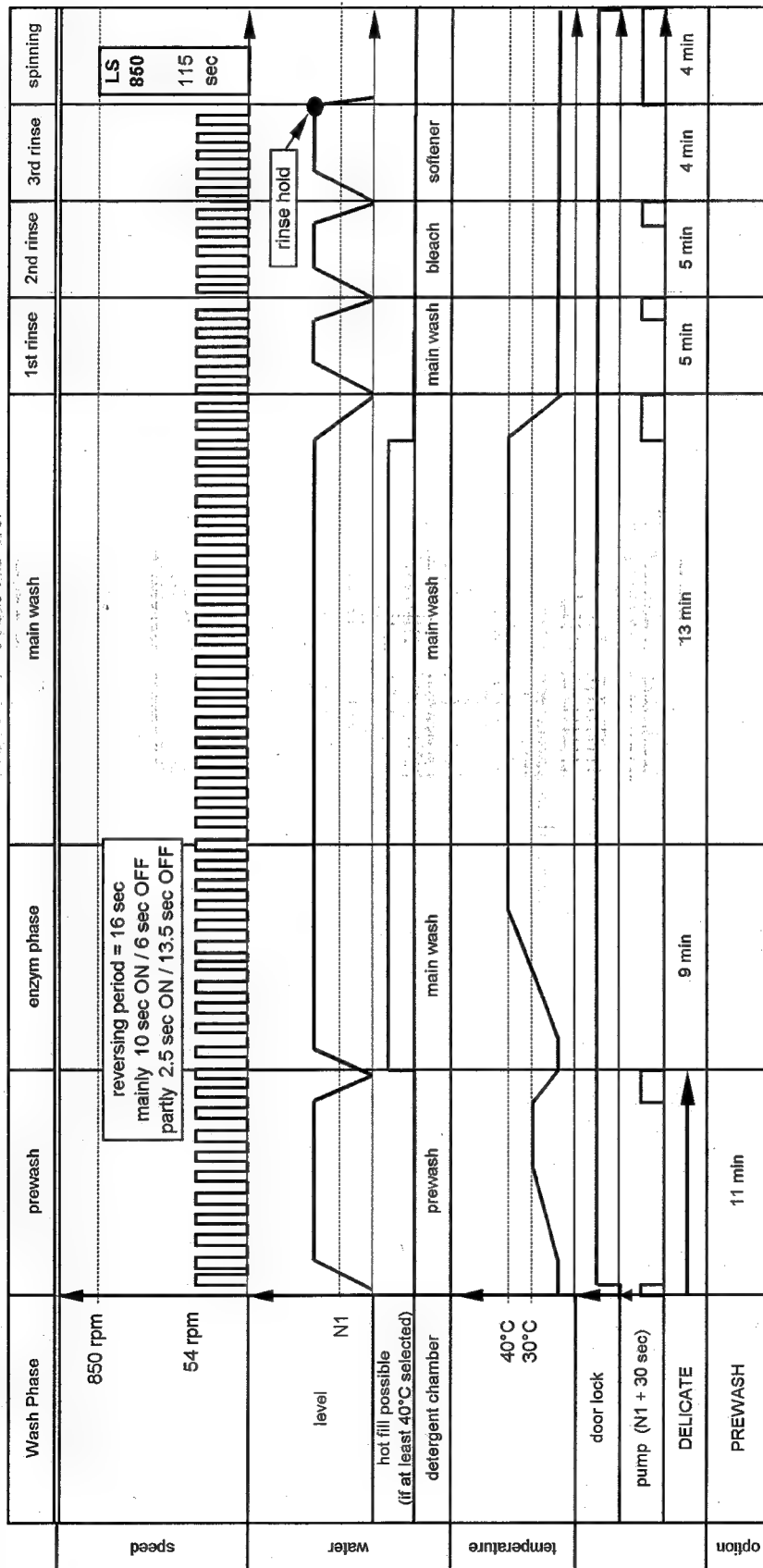


Program chart

4619 744 62701

Wash Cycle of DELICATE

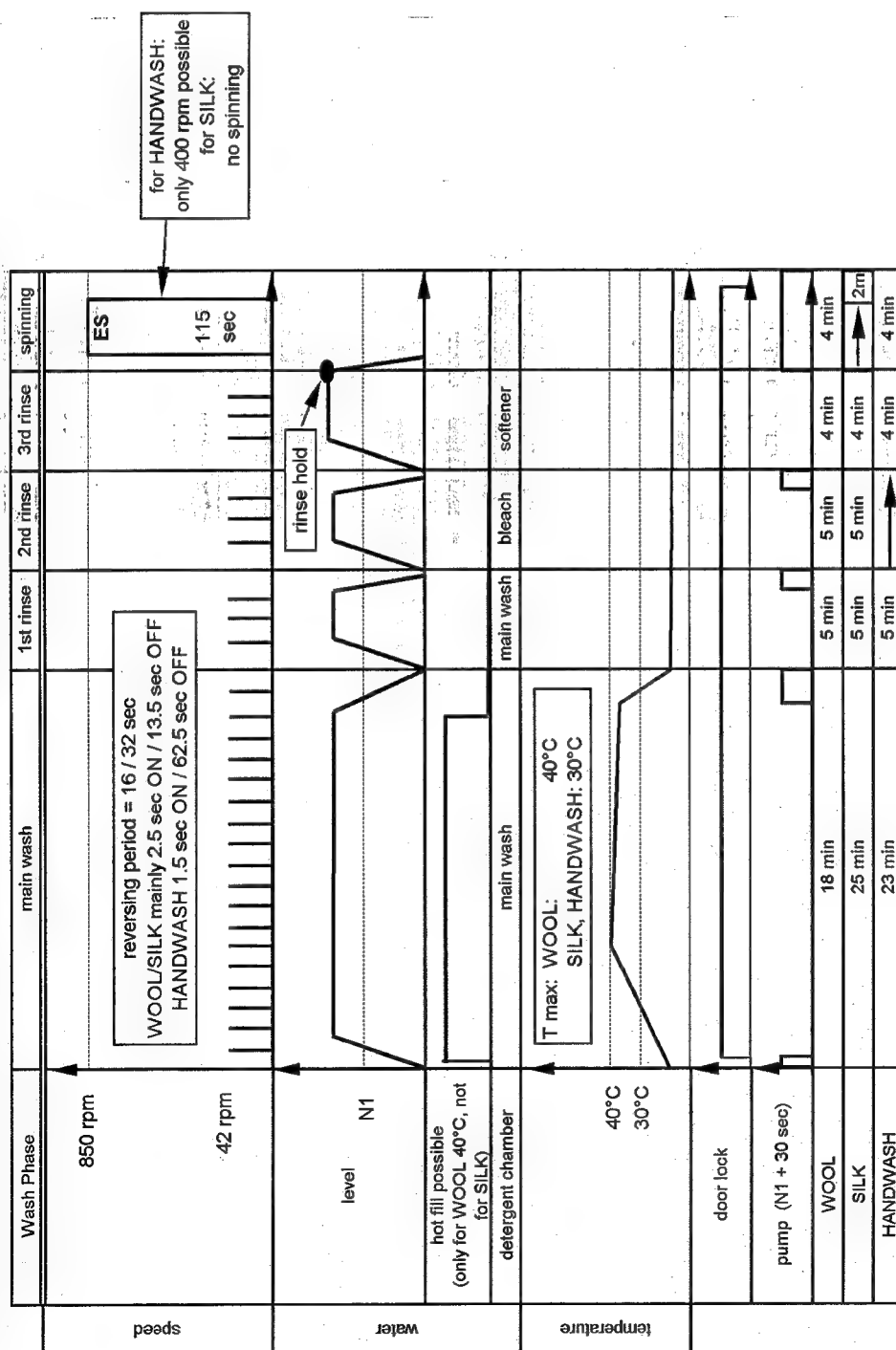
Delta SC1/ALPHA

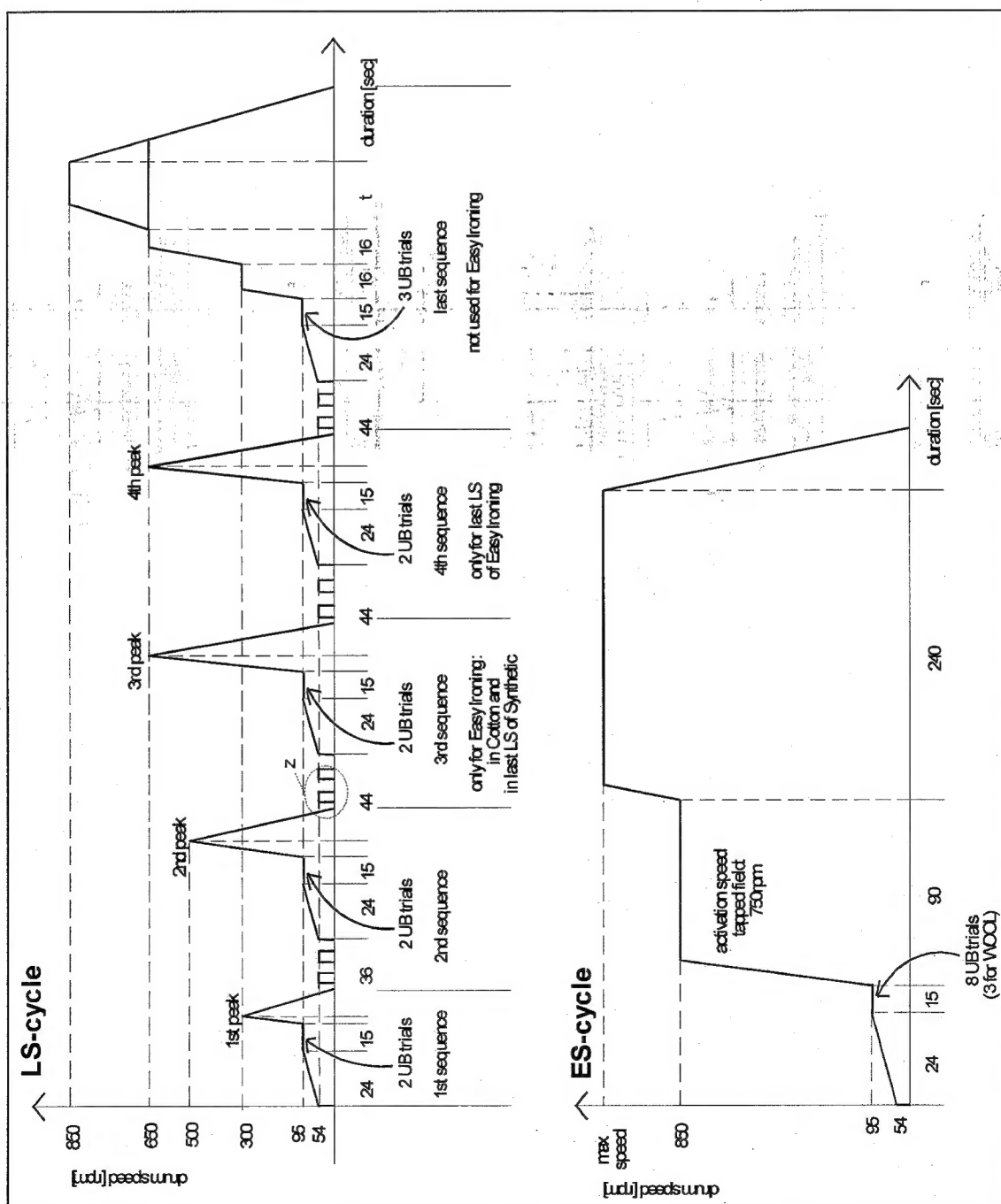


Program chart

Delta SC1/ALPHA Wash Cycles of WOOL, SILK and HANDWASH

4619 744 62701





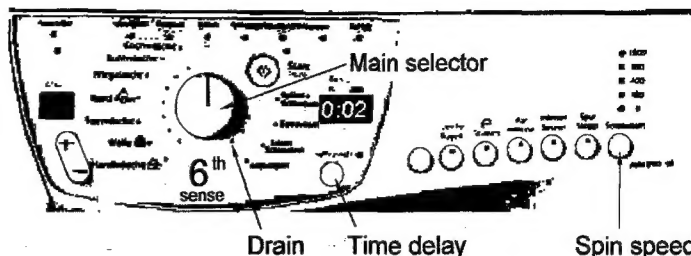
Text/Legend

Whirlpool SC1 VBL Version A and B test flow

1. Attention : Use test program without laundry !!

2. Selecting the program :

Select the Drain program by turning the main selector. Wait until the display shows 0:02 and till the pump has stopped



3. Start of test program :

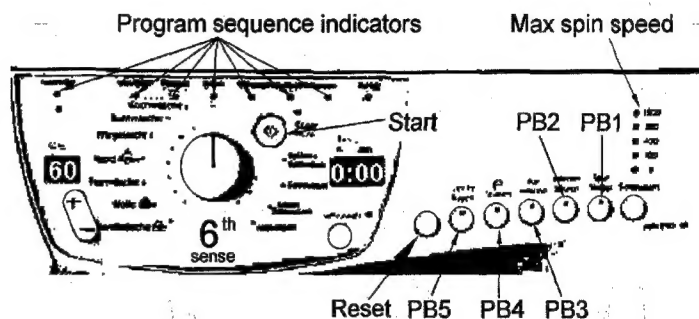
Press PB1 twice, then PB2 twice and then the start button.

Indication of entering the test program:

- temperature display = 60°C
- start delay LED = ON
- speed LED max = ON
- LED of PB1 and PB2 = ON

if available:

- LED aquastop = ON
- LED water tap = ON
- LED pump filter = ON
- LED door lock = ON



during the hole testprocedure until Reset is pushed.

4. Stopping the test program :

Stop by moving the main selector into any other position.
- note - no stop of test program by main interruption.

Testprogram for Whirlpool SC 1 timer VBL version A or B (Central program selector).

Position of timer	Pre-wash	Main-wash	Rinse	Rinse hold	Spin-ning	Detergent box	Inlet / Outlet	Max temp.	Duration (" = sec) (' = min)	Movement of drum	Advance condition	Advance by option button (Press slowly 2 times)	Checking
-	X	X	X	X	X	-				no movement	↓	PB3	PB1, PB2
6	X	X	X	X	X	pre wash	fill		60"	no movement		PB3	PB3
8						main wash	(hot) fill	hot fill	60"	no movement		PB4 **, PB1	PB4, mainwash fill, hot fill N1
16							fill		6'	gentle wash	N1		
18		X	X	X	X		fill			gentle wash	60"	PB1	
20							(fill)	90°C	55'	gentle wash	till 90°C - time unknown	PB1	heating, NTC leakage
23			X	X	X	bleach *	fill			turns right	3"		
27						softener	fill			turns right	60"	PB5 ** or PB1	PB5, bleach fill
28				X	X	-	pump		6'	gentle wash	N1	PB1	pump, N1
29					X	-	pump			0 - 95 rpm	4", N1		pump
						-	pump			select. Speed	300", N1	PB1	motor - spinning
5						-				no movement	∞		

** if PB4 / PB5 are present they must be used to advance to next step - if not present - use PB1 instead.

* 4 chamber detergent dispenser "bleach compartment"

3 chamber detergent dispenser "main wash" compartment

Reaction to failure:

Timer SC1 goes into safety routine

- drain to level 1+30 sec. (time out for draining = 6 minutes)
- stop motor (relais in safety position)
- stop valve
- go out of heating step, if time out is reached
- Start is flashing

Text/Legend

Table of failures:

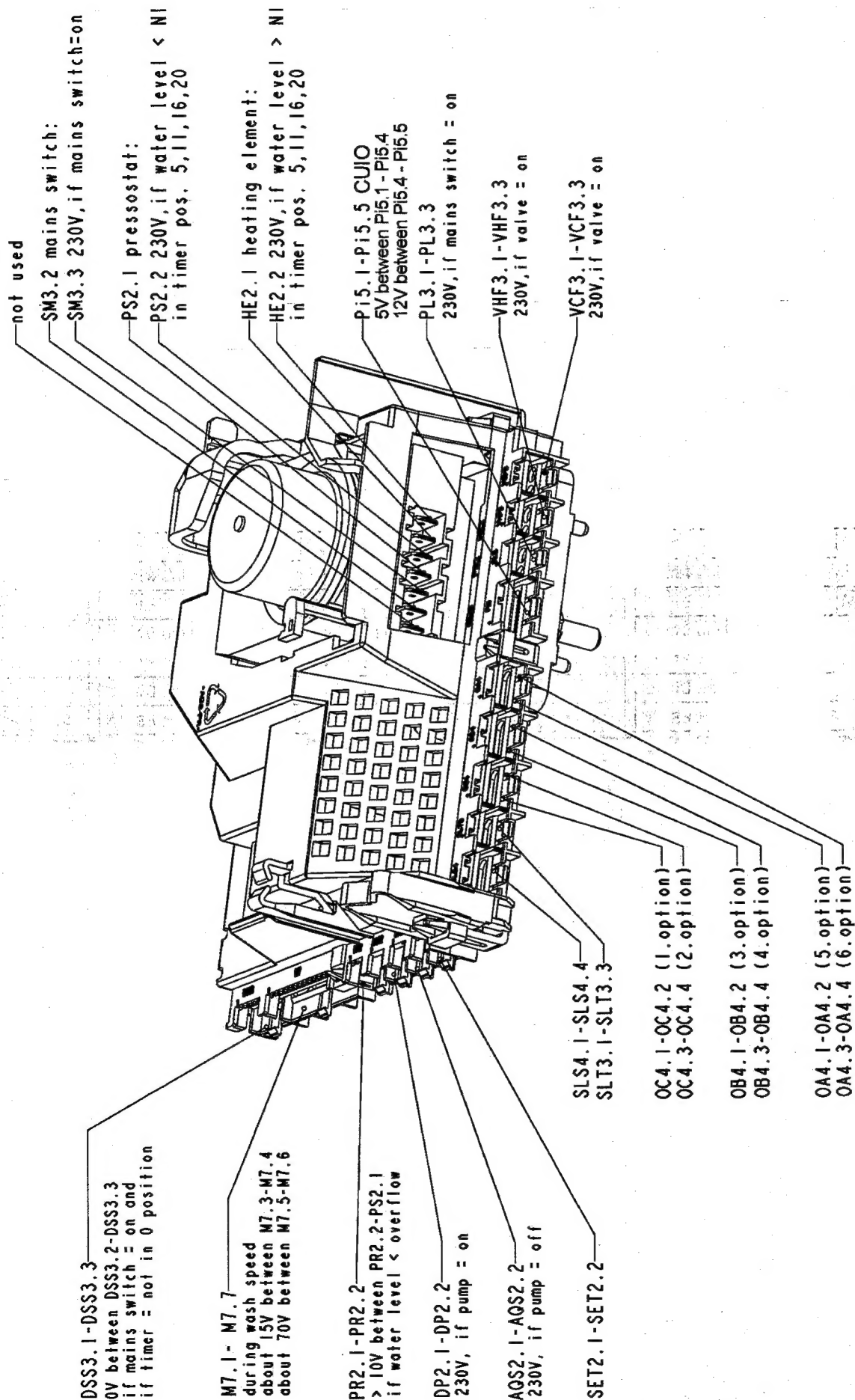
Failure Identifier	Indication	Detected failure	To be checked
0	F00	Pump triac failure	Control unit
1	FH	No water inlet	Water Tap / Valve / Flowmeter / Pressostat
2	FA	Aquastop failure	Aquastop switch
3	FP	Drain failure	Drain pump / Pressostat
4		Not active	
5	F05	NTC failure (SC / OC)	NTC
6	F06	Tachometer failure (no motor movement detected)	Motor / Tachometer
7	F07	Triac short circuit detection	Control unit, Motor
8		Not active	
9	F09	Overflow failure	Pressostat
10		Not active	
11	F11	Communication failure	Control unit, I2C bus
12		Not active	
13		Not active	
14	F14	EEPROM failure	Control unit
15		Not active	
16	F16	Control failure	Control unit
17		Not active	
18	F18	Control failure	Control unit
19	F19	Mains power failure	Power
20	F20	Control failure	Control unit
21	F21	Control failure	Control unit

Display of failures on the speed leds (flashing):

Errors	0 F:00	1 F:H	2 F:A	3 F:P	4 F:4	5 F:5	6 F:6	7 F:7	8 F:8	9 F:9	10 F:10	11 F:11	12 F:12	13 F:13	14 F:14	15 F:15
Speed Leds	○ ○ ○ ○ ○	○ ○ ○ ○ ●	○ ○ ○ ● ○	○ ○ ○ ● ●	○ ○ ○ ○ ○	○ ○ ● ○ ●	○ ○ ● ● ○	○ ○ ● ● ●	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○

Errors	16 F:16	17 F:17	18 F:18	19 F:19	20 F:20	21 F:21
Speed Leds	● ○ ○ ○ ○	○ ○ ○ ○ ○	● ○ ○ ● ○	● ○ ○ ● ●	● ○ ○ ○ ○	● ○ ○ ○ ●

Text/Legend



4619 712 54471-EBL